

REMARKS

Applicant thanks the Examiner for the teleconference held on June 20, 2003, in which the pending claims have been discussed. The Examiner suggested that a Summary Section be added to the Specification to summarize the claimed invention. However, Applicant would like to kindly point out that both the M.P.E.P. and 37 C.F.R. §1.73 do not require the presence of a "Summary of the Invention" in a patent application. They merely indicate where in the application the "Summary of the Invention" should be placed if Applicants were to elect to include one. In particular, 37 C.F.R. §1.73 only states that "[a] brief summary of the invention ... should precede the detailed description." 37 CFR § 1.73 does not state "must" or "shall." Accordingly, Applicant has elected not to include a "Summary of the Invention" as this is within the discretion of Applicant.

Further, as discussed during the teleconference, the claims have been amended to clarify the meaning of the components of the claimed invention.

The Examiner rejected claims 1-5, 7-18, and 20-29 under 35 U.S.C. § 102(a) as being anticipated by Bugnion, et al. (U.S. Patent No. 6,075,938). Claims 6, 19, and 30 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bugnion, in view of Devine, et al., (U.S. Patent No. 6,397,242).

Bugnion describes a virtual machine monitor referred to as Disco that allows multiple copies of "commodity" operating systems to be run on a single scalable computer. Disco virtualizes all the resources of the machine, exporting a hardware interface to an operating system. With respect to TLB operations, Disco performs

physical-to-machine translation using the software-reloaded translation-lookaside buffer (TLB) of the MIPS processor. (A similar technique is applied on processors with a hardware-reloaded TmB such as the Intel x86. The virtual machine monitor manages the page table and prevents the virtual machine from directly inserting entries into it.) When an operating system attempts to insert a virtual-to-physical

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mapping into the TLB, Disco emulates this operation by translating the physical address into the corresponding machine address and inserting this corrected TLB entry into the TLB. Once the TLB entry has been established, memory references through this mapping are translated with no additional overhead by the process...

(Bugnion, column 12, lines 13-25).

That is, Bugnion does not teach or suggest having an address translation data structure that is managed by an operating system of a virtual machine and a separate address translation data structure that is derived from the address translation data structure of the guest operating system and is managed by the VMM, as does the presently claimed invention. Hence, Bugnion lacks at least the features of the present invention that are included in the claim language of claim 1:

... creating a guest translation data structure to be used for address translation operations, the guest translation data structure being managed by a guest operating system;

creating an active translation data structure based on the guest translation data structure, the active translation data structure being managed by a virtual machine monitor (VMM)...

Similar language is included in independent claims 14, 24 and 28. Accordingly, Applicant respectfully submits that Applicant's invention as claimed in independent claims 1, 14, 24 and 28 and their corresponding dependent claims is not anticipated by Bugnion, and respectfully requests the withdrawal of the rejection under 35 U.S.C. § 102(a).

Devine does not help Bugnion. Devine discloses a virtualization system including a VMM for a computer with a segmented architecture. Devine lacks at least the same features of the presently claimed invention that are missing from Bugnion. Specifically, Devine does not teach or suggest having a guest translation data structure used for address translation operations that is managed by a guest operating system and an active translation data structure that is derived from the guest translation data structure and is managed by a VMM.

Thus, the above references, taken alone or in combination, do not teach or suggest the

presently claimed invention. Accordingly, Applicant respectfully submits that Applicant's invention as claimed in independent claims 1, 14, 24 and 28 and their corresponding dependent claims is patentable over the above references, and respectfully requests the withdrawal of the rejection under 35 U.S.C. § 103(a).

In view of the foregoing amendments and remarks, Applicant respectfully submits that the pending claims are in condition for allowance. Applicant respectfully requests reconsideration of the application and allowance of the pending claims.

If the Examiner determines the prompt allowance of these claims could be facilitated by a telephone conference, the Examiner is invited to contact Marina Portnova at (408) 720-8300.

Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicant hereby requests such extension.

Respectfully submitted,

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Dated: July 9, 2003

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